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REMARKS

The application has been reviewed in light of the Office Action dated February 24, 2006. Claims 1-18 are pending, with claims 5-18 having been withdrawn by the Patent Office from consideration. By this Amendment, claims 1 and 3 have been amended to correct informalities therein and to clarify the claimed invention. Accordingly, claims 1-4 are presented for reconsideration.

Claims 1 and 3 were objected to as having informalities therein. Claims 1-4 were rejected under 35 U.S.C. §112, second paragraph, as allegedly indefinite.

In response, the claims have been amended to correct the typographical errors therein, in accordance with the suggestion of the Examiner.

Withdrawal of the objection to the claims and the rejection under 35 U.S.C. §112 is respectfully requested.

Claims 1, 2 and 4 were rejected under 35 U.S.C. § 103(a) as purportedly obvious over U.S. Patent No. 5,318,653 to Toide et al. in view of U.S. Patent Application Publication No. 2004/0111913 A1 (Holmes) or U.S. Patent Application Publication No. 2004/0246884 A1 (Komaki et al.). Claims 3 and 4 were rejected under 35 U.S.C. § 103(a) as purportedly obvious over Toide, Holmes and Komaki and in further view of U.S. Patent No. 6,596,104 to Tomiyama.

Applicant has carefully considered the Examiner's comments and the cited art, and respectfully submits that independent claim 1 is patentable over the cited art, for at least the following reasons.

Claim 1 of the present application is directed to a method for adhering a part to a target with light energy curable adhesives. The method includes positioning a part at a prescribed relative position of an adhering target, coating plural sections between the part and adhering target with light energy curable adhesives, irradiating light energy to at least one of the light

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energy curable adhesives, generating a curing shrinkage force in at least one of the light energy curable adhesives, changing irradiation energy such that at least one portion of at least one of the light energy curable adhesives experiences a change in irradiation energy when the part and the target are displaced in the course of shrinkage of the at least one of the light energy curable adhesives so that at least one of the curing shrinkage forces can be changed and stresses generated by the curing shrinkage forces can be offset, and adhering the part to the adhering target while maintaining the part and target at the prescribed position.

Toide, as understood by Applicant, proposes a method for manufacturing optical disc by laminating two disc substrates with adhesive and employing a supporting table having a central axis in a normal pressure environment. The first and the second disc substrates are held with relative inclination and the adhesive is sandwiched therebetween. The inclination is gradually decreased and the discs are positioned to have a prescribed angle so that any bubble can be eliminated from the adhesive, and then the adhesive is cured.

However, Applicant respectfully points out that such an adjustment for the discs in Toide is executed before the adhesive is cured. Accordingly, Todie et al. does not teach or suggest a feature in presently amended claim 1 that "changing irradiation energy such that at least one portion of at least one of the energy light curable adhesives experiences a change in the course of shrinkage of the at least one of the energy light curable adhesives.

The other cited references do not cure the deficiencies of Todie.

Holmes, as understood by Applicant, proposes an electromagnetic energy spot curing system and method which can change a light emission intensity using a template that moves relatively in relation to a source of radiation in the electromagnetic spectrum, such as an ultraviolet light lamp. More specifically, the template includes several holes having increasing diameters in an arch state at a prescribed position distanced from a rotational axis, thereby

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linearly adjusting an intensity of energy applied to curable resin or the like by controlling a rotational angle of the template.

However, although the irradiation energy applied by the system of Holmes to the adhesive may affect final polymer properties such as shrinkage, Holmes does not teach or suggest a technique wherein positional deviation caused by curing shrinkage between the part and the adhering target is corrected during a curing process.

Komaki, as understood by Applicant, proposes an optical disc manufacturing method and apparatus capable of suppressing deformation and bending of optical discs (more particularly, DVDs) when they are laminated and curing shrinkage occurs. More specifically, light emission is executed plural times with different intensities, in the approach proposed by Komaki, so as to suppress deformation when light energy curable type resin layer receives emission of an energy light and is cured.

However, Komaki, like the other cited references, is silent as to control light intensity partially in order to correct displacement of the part and adhering target.

Tomiyama does not cure the deficiencies of Todie, Holmes, and Komaki.

Tomiyama, as understood by Applicant, proposes a method and apparatus for laminating optical discs. The apparatus proposed by Tomiyama includes a measuring device that measures a thickness of an adhesive layer, a rotation device that rotates a disc, a control device that controls rotation, and a pressure applying device that applies pressure to the disc. The apparatus proposed by Tomiyama applies adhesive between the two discs, feeds back a signal generated by detecting a thickness of the adhesive either to the disc rotation control device or the disc pressure applying device so as to uniformly form a layer of the adhesive. Then, the disc is laminated as described in column 6, line 31, and is cured when receiving a ultraviolet light in the next step.

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However, Tomiyama does not detect or control a relative position between the part and the adhering target. More importantly, such a control is executed in the approach proposed by Tomiyama in a process before the curing of the adhesive. Tomiyama is also silent as to correcting deviation caused by shrinkage when the adhesive is cured and as to adjusting positioning positively using partially curing shrinkage force.

Accordingly, since the cited references, individually or in combination, do not disclose or suggest all of the elements of independent claim 1 of the present application, Applicant submits that independent claim 1, and all of the claims depending therefrom, are patentable over the cited art.

In view of the amendments to the claims and remarks hereinabove, Applicant submits that the application is now in condition for allowance. Accordingly, Applicant earnestly solicits the allowance of the application.

If a petition for an extension of time is required to make this response timely, this paper should be considered to be such a petition. The Patent Office is hereby authorized to charge any fees that may be required in connection with this amendment and to credit any overpayment to our Deposit Account No. 03-3125.

If a telephone interview could advance the prosecution of this application, the Examiner is respectfully requested to call the undersigned attorney.

Respectfully submitted,

  
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